

Understanding affective learning outcomes in entrepreneurship education

Abstract

In the field of entrepreneurship education (EE), researchers, educators and policy-makers have long attempted to determine whether EE has an effect on students, and a multitude of studies have provided anecdotal evidence measuring the impacts of EE endeavours. The lack of understanding is particularly prominent in terms of affective learning outcomes, that is, the beliefs, attitudes, impressions, desires, feelings, values, preferences and interests of students and of the related indicators. In response to this lack of understanding, this study aims to identify students' affective learning outcomes in EE based on a taxonomy of affective learning outcomes (Krathwohl et al., 1964) and to investigate and understand in-depth the nature of these outcomes. The study draws empirically on the learning reflections of university students in a bachelor-level course on CE, which are qualitatively examined through thematic content analyses. The study revealed various external and internal affective learning outcomes based on the levels of expertise of students, and contributes to the existing EE literature by providing a more fine-grained understanding of the complex affective learning outcomes in EE. For educators, the study makes affective learning visible in EE and provides insightful information for programme development.

Keywords: entrepreneurship education, affective learning outcomes, higher education, corporate entrepreneurship

Introduction

Entrepreneurship education (EE) has boomed in recent decades. Higher education institutions (HEIs) have assumed an important role in educating students to become more entrepreneurial to promote economic growth and well-being after graduation (Kuratko, 2005; Nabi et al., 2017; Rae et al., 2012). Entrepreneurship scholars have acknowledged the importance of supporting entrepreneurial behaviour within established organisations, i.e. corporate entrepreneurship (CE), in addition to starting businesses (Kuratko et al., 2014; Kuratko and Morris, 2018) when pursuing growth. Although new business creation and CE occur in different contexts (i.e. new business vs. existing organisation), they share the foundations of entrepreneurship as a scholarly domain: entrepreneurial behaviour, process and emergence of something new (see Gartner, 1988). Given their similarities, entrepreneurship and CE programmes can both be considered as EE interventions aiming to enhance entrepreneurial behaviour among students. The impact or outcomes of EE have generated interest among entrepreneurship scholars (Blenker et al., 2014; Vesper and Gartner, 1997). Furthermore, policy-makers and educators

willing to support and expand EE are eager to find relevant metrics for evaluating the outcomes of EE (Kozlinska, 2016).

The impact and outcomes of EE have been studied from various angles (see e.g. Nabi et al., 2017; Pittaway and Cope, 2007). However, entrepreneurship scholars acknowledge the lack of rigorous research on the topic (e.g. Fayolle and Gailly, 2008; Galloway et al., 2015; Honig, 2004; Nabi et al., 2017), particularly on the affection and the related outcomes of EE (Mets et al., 2017; Nabi et al., 2017). These outcomes concern the beliefs, attitudes, impressions, desires, feelings, values, preferences and interests of students (Allen and Friedman, 2010; Friedman, 2008). In EE, where the aim is not only to spread knowledge about entrepreneurship but also to educate students to behave entrepreneurially in life (e.g. Fayolle and Gailly, 2008; Hytti and O’Gorman, 2004), affections are especially important. In particular, beliefs, attitudes and perceptions play a remarkable role in enhancing entrepreneurial behaviour and related intentions (Krueger and Carsrud, 1993).

Three main domains of learning have been presented in the literature: cognitive, affective and psychomotorⁱ (Anderson and Krathwohl, 2001; Bloom et al., 1956; Krathwohl, 2002), of which the affective domain of learning is arguably the most complex. Cognitive outcomes, which describe students’ actual knowledge and their ability to remember, understand, apply, analyse and evaluate knowledge and create new knowledge (Anderson and Krathwohl, 2001; Bloom et al., 1956; Krathwohl, 2002), are relatively straightforward for researchers to assess and study (Shephard, 2008). The psychomotor domain of learning focuses on the mastery of certain skills and is highly relevant in areas such as the laboratory sciences, health sciences or music, where coordination of the brain and muscular activity is especially important (Bloom et al., 1956; Kennedy, 2006). Psychomotor outcomes are also relatively easy to assess.

The complexity of assessing and understanding affective outcomes arises from the fact that the affective domain permeates the other learning domains (Pierre and Oughton, 2007). In addition, the affective domain is often considered as a highly individualised, ‘personal’ aspect of learning, and it is thus relatively difficult to measure (Allen and Friedman, 2010). Educators rarely openly develop or assess the attainment of entrepreneurial values and attitudes, even though their important role has been recognised, particularly in the field of EE (Nabi et al., 2017). Furthermore, the affective outcomes are important in all learning domains due to their intertwined role in meaningful learning (Piaget, 1952; Wight, 1971). Still, these important outcomes are often developed quietly without explicit goals or measurements of achievement.

In EE, scholars have opened the avenue for research on affective learning outcomes. The scarce and fragmented studies have focused mainly on unique and disparate learning outcomes (see e.g. Nabi et al., 2017), but this has not led to the development of a more nuanced understanding of the type and nature of affective outcomes that can be obtained in EE.

In response to this, the aim of this study is to identify students' affective learning outcomes in EE based on a taxonomy of affective learning outcomes (Krathwohl et al., 1964) and to investigate and understand in-depth the nature of these outcomes. Empirically, the study draws on the learning reflections of university students in a bachelor-level course on CE. The findings of this study demonstrate that EE can generate various affective learning outcomes that refer not only to the content of learning but also to its nature—how deeply learning manages to touch upon students' thinking and behaviour. By applying the taxonomy of affective learning outcomes it was possible to identify external and internal affective learning outcomes based on the levels of expertise and to suggest that only the internal affective learning outcomes can be considered as affective learning outcomes in EE. The study contributes to the existing EE literature by providing a more fine-grained understanding of the complex affective learning outcomes in EE as well as their development during an EE intervention.

This study proceeds as follows. First, affective learning outcomes are discussed in the EE context. Next, the methodology of this study is presented followed by an analysis of the affective learning outcomes of students. This is followed by a discussion and conclusions in which the limitations and implications of the study for research and practitioners are discussed.

Measuring affective learning outcomes

In the field of EE, researchers and practitioners have long attempted to determine whether EE affects students, and a multitude of studies have provided anecdotal evidence measuring the impacts of EE endeavours. The most widely used outcomes are self-efficacy, entrepreneurial intentions and number of start-ups (Nabi et al., 2017; Pittaway and Cope, 2007). Nabi et al. (2017) identify six types of outcomes and impact indicators in EE impact studies: changes in attitudes, changes in skills and knowledge, feasibility, entrepreneurial intention, business start-ups, performance and socio-economic impact and other impacts. Elaborated from the categorisation of Nabi et al. (2017), we have classified the types of outcomes, providing examples of related indicators and their applicability based on the existing EE literature (Table 1).

Table 1. EE learning outcomes and indicators

TYPE OF OUTCOME	EXAMPLES OF INDICATORS	APPLICABILITY / USAGE
Attitudes and emotions	entrepreneurial awareness, self-confidence, self-esteem, need for achievement, entrepreneurial spirit, entrepreneurial passion (e.g. Bakotic and Kruzic, 2010; Fisher et al., 2008; Fretschner and Weber, 2013; Friedrich and Visser, 2006)	acknowledged as important but captured only superficially, assessed based on self-reporting
Skills and knowledge	capability of identifying entrepreneurial opportunities, capability to act entrepreneurially, understanding about entrepreneurship (e.g. Gielnik et al., 2015; Munoz et al., 2011)	possible to measure but harder to relate to entrepreneurial actions due to time lag
Feasibility	perceptions of self-efficacy and feasibility (e.g. Galloway et al., 2005; Piperopoulos and Dimov, 2015)	widely used, assessed based on self-reporting
Intention	intention to start a business (e.g. Hytti et al., 2010; Krueger et al., 2000)	widely used, assessed based on self-reporting
Business start-up	Number of new businesses (Henry et al., 2004)	easy to measure, but requires longitudinal approach
Performance and socio-economic impact	performance (e.g. growth, profitability), GDP at the regional/economic level (e.g. Gordon et al., 2012; Lange et al., 2011)	difficult to isolate impact and requires longitudinal approach
Other	satisfaction and attitudes towards the EE programme (e.g. Crane, 2014; Rae and Woodier-Harris, 2012)	'happy sheet' but captures no real impact

Despite the multitude of studies on EE outcomes, Mets et al. (2017) and Nabi et al. (2017) argue that there is a lack of research addressing affect or emotion and, particularly, the related learning outcomes in EE. The complex affective learning permeates other domains of learning (e.g. Kyrö et al., 2011) and has a key role in changing the mind-sets and behaviour of individuals (Brown et al., 2001). Nabi et al. (2016) and Souitaris et al. (2007) argue that emotional aspects can override rationality in the development of entrepreneurial outcomes.

Moreover, Lackéus (2014) highlights the importance of emotional events in the formation of entrepreneurial competencies in EE. The few studies on affective learning outcomes examining the beliefs, attitudes, impressions, desires, feelings, values, preferences and interests of students capture the attitudinal rather than the emotional domain (Nabi et al., 2017). Still, the number of studies attempting to address attitudinal changes is limited. Mostly, cross-sectional, quantitative studies on entrepreneurial attitudes have focused on the extent to which participation in an educational activity influences the level of a certain attitude. Entrepreneurship researchers have identified some affective learning outcomes that can be facilitated through EE to create more entrepreneurially acting students. For instance, entrepreneurial spirit, entrepreneurial passion, self-efficacy for entrepreneurship, commitment to business ventures and entrepreneurial identity are considered to be affective outcomes (Fisher et al., 2008; Krueger, 2005; Markman et al., 2005; Sánchez, 2011). Intention towards entrepreneurship could also be considered as an affective learning outcome, but in this study we follow Ajzen (1991) and Krueger and Carsrud (1993) and presume that entrepreneurial intentions are not affective learning outcomes but rather are predicted by them. Overall, previous studies on affective learning in EE call for better knowledge of affective learning outcomes in EE.

In the field of education, where there is a long tradition of research on learning outcomes, researchers have developed frameworks that address and classify learning activity in terms of levels of mastered expertise. The most traditional and widely adopted classification is Bloom's taxonomy of educational objectives, which consists of three domains of learning: cognitive, affective and psychomotor (Anderson and Krathwohl, 2001; Bloom et al., 1956; Krathwohl et al., 1964). The taxonomy of affective learning suggests that the achievement of affective learning goals can be measured by five levels of achieved expertise (Krathwohl et al., 1964). In the taxonomy, the lower levels of expertise include students' willingness to minimally receive and respond to studied information, while the higher levels consist of modification and organisation of attitudes, beliefs and values in such a way that students perceive their world differently (Krathwohl et al., 1964). The first level of the taxonomy is *receiving*, which refers to the student's willingness to participate in the educational activity and to learn about the topic. The second level is *responding*, which is characterised by showing interest towards the topic. The third level is *valuing*, and it refers to internalising an appreciation for values. The fourth level is *organisation*. At this level, a student starts to compare diverse values and resolve possible conflicts between them to form an internally consistent value system. The fifth level

is *characterisation* by values, which refers to adopting a long-lasting value system that is pervasive, consistent and predictable.

Like many seminal works, Bloom's taxonomy of education objectives and its premises have been widely challenged (see e.g. Addison, 2014; Furst, 1994; Hussey and Smith, 2008; Murtonen et al., 2017; Ormell, 1974; Postlethwaite, 1994; Pring, 1971). The criticism has usually been targeted at the most famous part of Bloom's work: the taxonomy of cognitive learning outcomes (Anderson and Krathwohl, 2001; Bloom et al., 1956). The major criticism of this taxonomy is related to the clarity of categories and its hierarchical and naïve structure. Clarity issues include the fact that the distinction between levels of taxonomy may be blurred and rater-dependent. (Postlethwaite, 1994.) With its diverse levels, the taxonomy could suggest that learning is sequential. However, it is important to note that learning is not always linear, and the linkages between levels are not straightforward or automatic (Buissink-Smith et al., 2011; Postlethwaite, 1994). The classification and separation of different levels might give too simplistic a picture of learning and conceal its 'messy' part—behaviours are not isolated as the taxonomy suggests (Pring, 1971). Despite these deficits, the taxonomy is regarded as one of the most influential works in the field of education. Since the main criticism focuses on the design of the taxonomy rather than on its actual content, we acknowledge that the criticism touches upon also the taxonomy of affective learning outcomes. Even though learning might not occur in as straightforward and easily measurable of a way as the taxonomy suggests, it can, however, offer a richer understanding of the affective component of learning (Kennedy, 2006) by serving as a framework to capture related outcomes. To our knowledge, the taxonomy of affective learning outcomes has not yet been utilised in measuring the development of expertise in the field of EE despite its potential. We consider the taxonomy especially valuable in areas where the research on outcomes is still in its infancy—such as in studying the previously identified affective learning outcomes in EE. In order to gain more nuanced understanding on affective learning outcomes in our empirical study we ask based on a taxonomy of affective learning outcomes (Krathwohl et al., 1964) what kind of affective learning outcomes do the university students report in the bachelor level course on CE.

The Research Context: University-level course on corporate entrepreneurship

This study reports the learning outcomes of university students in a compulsory bachelor-level course on CE in a business faculty of a Finnish multidisciplinary university. The course 'Corporate Entrepreneurship and Creating Entrepreneurial Mind-sets' focused on

entrepreneurial behaviour in existing organisations (see CE as entrepreneurial behaviour in existing organisations, e.g. Antoncic and Hisrich, 2003, Åmo and Kolvereid, 2018) and developing the entrepreneurial mind-sets of students. During the course, the students were expected to learn the concept of CE and its potential benefits and drawbacks for employees and organisations. Learning goals also included understanding the antecedents of CE and what it takes to create entrepreneurial mind-sets and organisations as well as personal assessment as an entrepreneurial actor.

The course consisted of four four-hour interactive sessions, which encompassed different themes of CE and the entrepreneurial mind-set. Learning in the classroom followed flipped classroom principles (see Bergmann and Sams, 2014). Before each session, the students were required to read two to three scientific articles and prepare a reaction paper on their learning reflections from the previous session and the articles. The content and lessons learnt from the articles were processed with the use of different pedagogical methods, such as group work, guided discussions and various types of exercises including drama play. Before the course, the students submitted a pre-assignment on entrepreneurial individuals, organisations and themselves as entrepreneurial actors. After the course, a similar post-assignment was conducted to identify the students' learning, both for themselves and for the teachers. The students used and discussed these assignments in their learning diaries, in which they demonstrated their learning and the learning outcomes of the course.

In their learning diaries, the students were encouraged to bring up issues they found interesting and relevant to demonstrate their learning of CE and the entrepreneurial mind-set. They were asked to focus especially on reaching the learning goals set for the course. During the course, the students' learning was assessed mainly based on their learning diaries but also on their assignments and active participation during the sessions. We acknowledge that the course assessment affected the content of the learning diaries, as students may have attempted to write out learning that they considered to be valuable from the teacher's perspective. It is impossible to assess whether the students made false descriptions of their learning in the hope of achieving a better grade. Still, the written diaries are reflections of what the students think and, hope they, have learnt in the course.

Methodology

The study focuses empirically on two student cohorts, with a total of 74 students who completed the course in the 2015 and 2017. Most of the students had passed the elementary

first-year course on entrepreneurship when attending the bachelor-level course on CE. The students were primarily from business disciplines, although a small number were engineering students minoring in entrepreneurship and some were exchange students with multicultural backgrounds. A total of 57 per cent of the students were female while 43 per cent were male.

Measurement of affective outcomes is typically done using different types of self-reporting instruments (Rubin and Martell, 2009). This study also relies on students' self-reporting, as we used the reflective learning diaries of the students (10–15 pages each) as research material when exploring the learning outcomes. The learning diaries are valuable sources of information because they provide rich data on students' learning processes and outcomes. As an ethical procedure, all participating students were informed of the research during the first course session. All the students gave permission for anonymous use of the collected data for research purposes.

The analysis of the research material took place in several steps by drawing on the steps of thematic analysis by Braun and Clarke (2006). First, the learning diaries of the students (n=74) were read through, and the learning outcomes (i.e. sentences where students discussed their learning) were collected into node learning outcomes in NVIVO. Second, this node was read through multiple times, and its content was further classified into three child nodes: *cognitive* (n=328), *psychomotor* (n=64) and *affective learning outcomes* (n=88) based on Bloom et al. (1956), Krathwohl et al. (1964) and Krathwohl (2002). Third, the focus was placed on the child node affective learning outcomes, the content of which was further categorised into different levels of expertise based on Krathwohl et al. (1964). We excluded the lowest level of the taxonomy, receiving, as we consider it to be achieved through course participation. Fourth, to understand the content of the affective learning outcomes from the perspective of EE, we further categorised the research material based on learning outcomes identified in the EE literature (Table 1). The sentences in each level were classified based on the identified indicator of EE outcomes. Some sentences (e.g. those describing the nature of CE) did not fit the existing indicators but remained data-driven learning outcomes. Finally, the affective learning outcomes identified in the study were labelled and are discussed in the analysis section. Appendix 1 demonstrates the analytical process through examples based on the research material.

Based on the analytical process described above, we were able to identify and classify the affective learning outcomes of the students as described in their learning diaries. To gain a

more in-depth understanding of the nature of affective learning outcomes and the individual context in which they were achieved, we focused on the learning diaries of two students: Ann and John. The thematic content analysis of the research material formed the basic information for selecting the two learning diaries for further analysis. First, we identified four learning diaries with more frequent quotations about affective learning outcomes and reviewed them thoroughly. Second, given the aim of the study, we decided to focus on learning diaries, which are able to richly capture the higher levels of affective learning outcomes in CE. At this stage, two learning diaries were excluded from the analysis because they did not focus on CE but rather on business start-ups and/or lower levels of affective learning outcomes. The selected learning diaries of Ann and John demonstrated their individual reflections on CE, particularly from the point of view of their own relationship to CE, indicating higher levels of affective learning, and therefore these were analysed more in-depth. The content analysis of the learning diaries focused holistically on Ann's and John's learning reflections during the course rather than looking at the texts containing affective learning outcomes only. This was done to understand the nature of the higher-level affective learning outcomes in their own context. Both authors conducted the in-depth analyses of the two learning diaries by themselves, and then the analyses were compared to reach consensus regarding the core findings.

In the following two sections presenting the findings of the thematic analysis, selected quotations from the research material are included to demonstrate the students' reflections on and interpretations of their learning. (S[number]) after each quotation denotes the student whose quotation is presented. The names Ann and John are pseudonyms to maintain the anonymity of the two students whose learning diaries have been analysed more in-depth.

Analysis

CE as a topic

In their learning diaries, all the students discussed the course topics, summarised the given articles and connected the knowledge gained to their previous understanding of entrepreneurship in general and CE in particular. The learning diaries included accurate descriptions of the course content and the different types of activities that occurred in the course sessions and the ways in which the exercises pushed them to reflect upon the entrepreneurial characteristics and entrepreneurial behaviour.

'I believe being entrepreneurial is not something you just learn at once, but it is a lifelong process of learning from mistakes and experiences.' (S3)

The students discussed and reflected on their active participation in the course activities during the sessions and the thoughts that were triggered by class activities.

'We had to complete a task in which we had to draw an entrepreneurial person, showing his characteristics, skills, social and economic status, education, industry, sex, nationality, skills, hobbies, interest, style and values with his interests and characteristics. We were divided into groups in a random order, and it was a sort of opportunity for us to share our ideas and discuss how we feel differently about an entrepreneurial person, their characteristics and lifestyle. It was quite an interesting task.' (S32)

The learning diaries demonstrated the students' interest in the course topics and the issues that remained unclear and made students ponder thereafter. In addition, some learning diaries illustrated previous experiences, i.e. how the themes of the course were present in working life.

In all, the students discussed and reflected on the concept and phenomenon of *CE* (nature of *CE*) without taking any clear stance for or against the *topic* or on its benefits or drawbacks. Their participation in the course demonstrated their willingness to learn about *CE* and thus reflected the achievement of level 1, willingness to *receive* new knowledge, with regard to the taxonomy of affective learning outcomes. By writing and submitting a learning diary and seeking new information and perspectives on *CE*, they *responded* and showed genuine interest in the course topic and reached level 2 of the taxonomy. Given that the students were expected to write learning diaries discussing the course content and activities, the first and second levels of expertise had to be reached to pass the course.

Problematizing CE

Fewer than half of the students described and pondered the nature of *CE* by focusing on their feelings and beliefs related to it. *CE* was portrayed as a multifaceted, complex and contextual phenomenon that is characterised by entrepreneurial spirit.

'I believe strongly that, like becoming a good leader, becoming more entrepreneurial, there is a path that people can actually learn and grow.' (S41)

'You can be entrepreneurial with almost everything.' (S13)

The role of self-confidence was brought up. Students realised that different types of individuals can succeed and achieve ‘great things’, not only those born with exceptional skills. The students learnt to understand how it is possible for someone to behave entrepreneurially.

‘The guest speaker also inspired me because he showed that you don’t have to be an A student or go to university to succeed in working life. If you have passion to do something, you will succeed even though it means making mistakes.’ (S35)

The students also questioned the benefits of CE for individuals and organisations. On the one hand, it was considered as a ‘default’, that is, something that is expected in present working life, but on the other hand, the downsides of CE were reflected upon. The students also considered the antecedents, challenges and consequences of (corporate) entrepreneurship and entrepreneurial behaviour.

‘In reality, you face number of barriers and challenges when trying to take entrepreneurial initiatives.’ (S32)

‘Also, what came up strongly in the story was that being entrepreneurial is difficult.’ (S35)

In addition, the students pondered how the implementation of CE and the ways in which it is encouraged within organisations depend on the context (i.e. on the organisation). It was acknowledged that some organisations and employees are not necessarily used to entrepreneurial behaviour and that entrepreneurial competences may vary. In addition, it was acknowledged that a desire for comfortable and stable life discourages individuals to act entrepreneurially and find new and interesting perspectives.

‘An individual who has strong competence in entrepreneurship can organise something so great, but on the other hand, the example showed how managers and bad organisation strategy can destroy the entrepreneurial activities in an organisation.’ (S49)

‘I thought the main reason is that they were afraid to change. Changing means that people have to face the challenges and invest their money and time in order to get good or bad unknown results. People love a stable life, and the fear of change will restrict them from discovering new things.’ (S46)

The students were able to *problematise CE*. Problematizing implies that students were capable of critically pondering the value, advantages and disadvantages of CE and entrepreneurial behaviour for individuals, organisations and even society. CE was portrayed as a multifaceted,

complex and contextual phenomenon that is characterised by personal growth and entrepreneurial spirit. The students clearly expressed their understanding about CE and entrepreneurial behaviour as well as their antecedents and consequences. Furthermore, they questioned the applicability of CE in various settings and *valued* the phenomenon, thus reaching level 3 of the taxonomy of affective learning outcomes. In all, when the students problematised CE, the identified affective learning outcomes were mainly ‘external’ in the sense that they described the themes and ideas that they picked up from the course materials and discussions in the sessions. They acknowledged some pros and cons of CE but did not refer to their own relationship to CE nor to the possible implications of their learning towards their own future actions.

Own relationship to CE

About a third of the students wrote about their relationship to CE and entrepreneurial actions in more depth. Enhanced entrepreneurial spirit was widely discussed. This was demonstrated in multiple levels in the diaries: own entrepreneurial spirit, how to enhance entrepreneurial spirit among employees and its value for an individual and an organisation. The students perceived one’s entrepreneurial spirit as an asset in different types of positions and organisations and claimed that they had learnt how to exploit the asset in different settings. The enhanced entrepreneurial spirit was also connected to one’s self-efficacy.

‘I have learnt about how to act as an entrepreneurial person and what one with such a mind-set should actually do.’ (S13)

‘What I have gained from this course will be an advantage for me, as I now have a better idea about how to act as an entrepreneur in an organisation and also how to create and nurture a corporate entrepreneurship mind-set if I have my own business or hold management positions.’ (S17)

The students also addressed notions of both positive and negative self-efficacy as well as whether (corporate) entrepreneurship is suitable for one’s mentality, abilities and values. The students wrote about the existing contradictions in entrepreneurial behaviour within an organisation; on one hand, one might enjoy the freedom and ability to make a difference at work, but on the other hand, the continuous pressure to behave entrepreneurially might be too stressful.

'I would be extremely happy to work in a company where corporate entrepreneurship is supported, but I don't think I would enjoy the possible pressure that would come with it.'

(S29)

Based on the reflections, it seems that the applicability of the phenomena of entrepreneurship had changed and widened in the minds of the students. At the end of the course, entrepreneurship did not refer to business ownership and start-ups only but was considered equally relevant and applicable in other types of work. Therefore, it was possible for some students to consider themselves as entrepreneurial actors, although not necessarily as nascent entrepreneurs or business owners. The students also referred to their enhanced need for achievement and the potential to stretch their thinking and behaviour beyond existing modes.

'I understand that I do not have to be a superhero to survive as entrepreneur. I can stretch this way of thinking on entrepreneurship and how I am acting in my current workplace.' (S4)

Some students reflected on and discussed the development of their self-confidence. It seems that participation in the course activities and learning about CE and entrepreneurial behaviour contributed to building their self-confidence and helping them to become bolder in their future behaviours.

'The most important thing I will be taking with me from the course is a whole lot of confidence and courage to pursue my dreams.' (S26)

The students were able to reflect more deeply upon *their own relationship to CE* and entrepreneurial behaviour. The students described their learning outcomes in a more personal and multifaceted manner. They compared different values and tried to resolve related conflicts to form a consistent understanding of the phenomenon. The taxonomy refers here to the *organisation* of new value systems. The reflections of these students were clearly more 'internal' than the ones presented above (i.e. CE as a topic or problematising CE), implying that the students pondered the topics and their learning from their own perspective in terms of whether acting entrepreneurially has possible implications for oneself and one's actions and values.

Internalising CE as one's own mode of work

A minority of the learning diaries showed some slight revision of judgements and a willingness to change behaviour due to new knowledge and experiences gained during the course. In these

learning diaries, the students discussed their need for achievement, as the course setting had triggered a desire for accomplishment and mastery of important skills and qualities, which were seen as being important for future endeavours. The course made some students think about and change their perceptions of entrepreneurial careers. It also provided a better understanding of the important qualities needed in entrepreneurship, and it created a need to further develop these qualities.

'I would like to be an entrepreneur and those three characteristics, as far as I'm concerned, I don't have them yet. Therefore, I will now be able to try to develop them in order to fulfil as many of the characteristics as possible to be a good entrepreneur.' (S1)

'I am motivated when it comes to things that I am interested in, but if I have to do something that I do not really like, it is hard for me to find motivation to do those things. This is something I need to work on, and keep in mind that you cannot learn how to swim unless you get wet first.' (S13)

The learning diaries also demonstrated enhanced self-efficacy and entrepreneurial spirit among some students. The participative course setting, and especially the guest lecturers with entrepreneurial backgrounds, encouraged the students to act entrepreneurially, propose new ideas and further examine their own choices to bring value to the company and to themselves. The students also acknowledged the role of their own motivation in behaving entrepreneurially.

'The interesting guest lecturers [name1] and [name2] inspired me to take more bold actions inside the organisation I am working in and also to examine my own choices.' (S4)

Based on the learning diaries, the course also produced different types of affective outcomes in terms of the students' self-efficacy beliefs regarding entrepreneurship. The course setting had obviously shaped the students' beliefs of whether one has the competencies to operate successfully as an (corporate) entrepreneur. Some students came to the conclusion that an entrepreneurial career is not something for them based on their new knowledge about the skills that might be useful in entrepreneurship and what form entrepreneurial behaviour might take in practice.

'During the course I understood that my nature is definitely not an entrepreneurial one since I do not have such a quality as being self-appointed to tasks. Also, intrapreneurs are people who are self-determined goal-setters that often take the initiative to do things no one has

asked them to do. Intrapreneurs also tend to be confident with their skills and to be action-oriented. And that definitely does not apply to me.’ (S5)

Only a few students made a significant effort to reflect on how the course topics and related exercises and discussions had influenced their thinking, actions and values in the long term. They *internalised CE as their own mode or work*. Moreover, they demonstrated some revision of their judgements and a willingness to change their behaviour due to new knowledge and experiences gained during the course. Their reflections in the learning diaries implied a clear willingness to adopt new entrepreneurial modes of action and even demonstrated concrete steps towards that direction, either during the course or in the near future. The taxonomy refers here to *characterisation* by values when students adopt a long-lasting and consistent value system. These learning outcomes were personal and highly ‘internal’. For university students, particularly bachelor’s degree students, this level is hard to achieve, as they rarely have a forum to apply their new beliefs and modes of action in real working life situations.

Analysis of higher-level affective learning outcomes

To understand the nature of the higher-level affective learning outcomes in their own context, two learning diaries were analysed in more depth. Ann’s learning diary demonstrates how she constructed her relationship to CE during the course. She named her learning diary ‘*The story of four weeks of self-awareness*’, and it reflects the content and schedule of the course by discussing the core themes of the CE course—what, how and why—and then it ends with a wrap-up. In the introduction, she states that the course was ‘*truly a turning point*’ for her, as she realised that entrepreneurship is not only about being a business owner; it is also possible to act like an entrepreneur in an existing organisation. Ann insightfully discusses the various exercises given during the sessions and emphasises the element of surprise (i.e. being faced with activities and tasks she did not expect to take place during the lessons). Her learning diary demonstrates her reflective learning, and she focuses on studying the theoretical concepts, experiencing some of these in the activities and learning through practical examples, such as the visiting entrepreneurs who came to the class as well as joint discussions in student groups. In particular, she relates to a visiting entrepreneur’s story that helped her to understand that it is up to her to decide whether she wants to succeed and enjoy her work:

‘One is his efforts to go from an introvert to an extrovert. It is definitely not easy. I am an introvert, and I feel like only if I was born once again that I could adjust myself from

introvert to extrovert. The next point is his simple definition of success: have a good day...

Only when the motivation to work is from inside can we make our day a good day.'

Finally, a group exercise (a drama play) and the feedback Ann received from a classmate made her realise that even an introvert such as herself could succeed in unexpected challenges, and she was able to recognise her entrepreneurial potential:

'She [peer student] also saw in me some entrepreneurial actions, which gave me more confidence in my entrepreneurial potential.'

The course clearly widened Ann's thoughts about CE and its applicability in working life and even for herself. The course also enhanced her self-confidence toward entrepreneurship. She concluded her learning diary by mentioning that entrepreneurs form 'a happy and efficient workforce' but left it open as to whether she is committed to becoming one. Ann's learning reflection demonstrates that she valued entrepreneurial behaviour highly and appreciated her own entrepreneurial potential. In particular, Ann's learning outcomes demonstrated how the course served as a turning point for her. It changed her understanding about entrepreneurship, and she gradually became aware of her own entrepreneurial potential as well as the applicability of CE to her future working life despite not being ready to internalise entrepreneurial behaviour as her own future behaviour.

John's learning diary demonstrates how he internalised CE as his own mode of work during the course. The title of John's learning diary, '*Should I become an entrepreneur?*', reflects his pondering and learning. In the introduction, John sums up his learning during the course: a very vague pre-understanding of CE, an overview of the course highlights including the visiting entrepreneurs and the drama play and finally the structure and approach of his learning diary with a focus on his own reflections:

'I will utilise the findings in earlier chapters and consider whether I should take more actions to become an entrepreneur and what kind of actions could make it happen.'

Similar to Ann's learning diary, John also follows the content and schedule of the course by discussing the core themes of the CE course: what, why and how. He first discusses the topic of CE based on the theories provided for the class and then includes his individual critical reflection on these—how he applied CE in his current job as an ICT (information communication technology) expert and whether he could consider himself entrepreneurial. He

also acknowledges that doing a bit better at work is not enough to be entrepreneurial but one really needs to stretch the existing boundaries:

'I am wondering if my own actions are entrepreneurial or not... I might have only tried to improve the normal daily routines by combining them with something old, but not really tried to expand the limits how the organisation acted currently... I do not think that I have yet taken actions that are significantly separate from normal routines.'

John acknowledges that there is still room for him to improve in terms of CE, and he comes to the conclusion that *'I should make an effort to take entrepreneurial actions, to be more satisfied with my job and with my company to perform better'*. Furthermore, he concludes that CE does not necessarily require exceptional characteristics and immediate quantum leaps with new start-ups, but it is possible to stretch one's thinking and action in one's current job in a mundane manner. He also makes a promise to himself as a future manager:

'I will make sure that the people working under my supervision will have the courage to try something completely new for the company to succeed in the future.'

The course made John critically ponder his job and own actions and attitude at work. He considered his job to be nice, but he still was not satisfied with certain practices and his own actions in his workplace. The course helped John to realise that to behave entrepreneurially, one really needs to go beyond one's comfort zone and act totally differently than before. He also realised that he could fight his frustration in his current job by acting entrepreneurially. He was determined to *'find the entrepreneur in me'* and committed to transferring his thoughts into new actions. In internalising CE as his own future mode of work, John was an exception in the course. Indeed, he was already working as an expert and was thus capable of reflecting on the practices and his own actions in his workplace. He became committed to finding his own way of entrepreneurial action and demonstrated his willingness to transfer his new thoughts into action in his current job.

Discussion

The study explores university students' affective learning outcomes during an educational intervention in EE. The aim was to identify different types of affective learning outcomes and to gain an in-depth understanding of the nature of these outcomes. The educational context of the study was a bachelor-level course on CE. By building upon the taxonomy of affective

learning outcomes (Krathwohl et al., 1964) and the related levels of expertise, we were able to identify four types of affective learning outcomes on CE to which the students referred in their learning diaries: CE as a topic, problematising CE, own relationship to CE and internalising CE as one's own mode of work. Figure 1 summarises the affective learning outcomes of CE, as identified in the study. Moving from level I to IV deepens the level of expertise gained. The original taxonomy of affective learning outcomes is also depicted in the figure to demonstrate the correspondence between the categorisations.

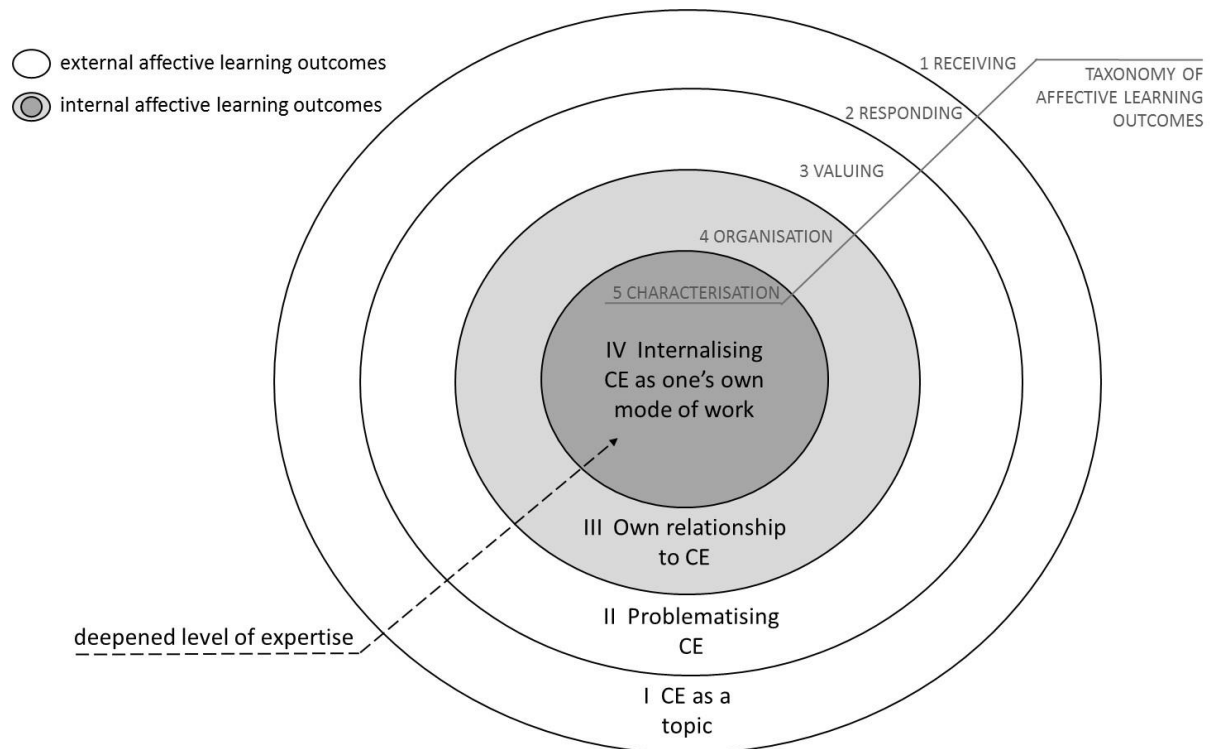


Figure 1. Affective learning outcomes of CE

This study reveals that the external learning outcomes (i.e. CE as a topic, problematising CE) are relatively easy to achieve. The way the course was organised and assessed required all the students to reach at least the first level (i.e. being able to demonstrate an interest in discussing the course topic). The second level of expertise, problematising, was less common among the students, although some students successfully pondered the nature of CE by discussing their related feelings and beliefs. CE as a topic and problematising CE as affective learning outcomes do not imply considering one's own stance towards CE and entrepreneurial behaviour.

Students' reflections on their learning outcomes mostly remained external to themselves without any clear references to their own beliefs, attitudes, impressions, desires, feelings, values or preferences, which constitute the affective domain (Allen and Friedman, 2010;

Friedman, 2008) and which are acknowledged to have a crucial role in entrepreneurial behaviour (Krueger and Carsrud, 1993). Therefore, it is justified to question whether these two levels of expertise can be considered as affective learning outcomes of EE since they appear to be cognitive learning outcomes instead.

The other internal learning outcomes (i.e. own relationship to CE and internalising CE as one's own mode of work) are harder to achieve, as they require taking a personal stance towards CE or even concrete entrepreneurial actions. Interestingly, some students reached these levels of expertise and reported affective learning outcomes, even though the course was not specifically designed to elicit such behaviour. The internal, higher-level affective learning outcomes that were identified are very personal. This is understandable because entrepreneurial behaviour is intrinsically very personal, and therefore, values, attitudes and perceptions differ between individuals (see e.g. Iakovleva et al., 2011). This implies that motivations prompting entrepreneurial behaviour differ for individuals depending on their personal values (see e.g. Jaén and Liñán, 2013; Moriano et al., 2007), which can be addressed with an educational intervention, as this study suggests.

These students with internal affective learning experiences were, however, exceptions in the group. The study also reveals that cognitive learning outcomes lay the groundwork for achieving affective learning outcomes; it is easier to reflect on one's own relationship to CE or even internalise it as one's mode of work if one knows what it is all about. New knowledge, therefore, may enhance motivation for personal reflection and entrepreneurial behaviour. Better self-awareness and self-efficacy are also likely to increase one's motivation to change behaviour, as Ann's learning experiences demonstrated. Furthermore, reaching the highest level of affective learning outcomes in CE was very rare, as it seems to require the ability to test and reflect upon one's entrepreneurial behaviour at work, something that John was exceptionally able to do at his workplace.

The idea of internal and external learning outcomes resonates with the different learning approaches of students discussed in educational studies. According to Biggs (1999), students following a surface approach to learning accept new facts and ideas without criticism and attempt to store them as isolated, unconnected items. This seems closer to the external learning identified in this study when students gained new understanding about the topic. Although the students also problematised the challenges and opportunities related to CE, they did not consider their own stance towards CE. Those following a deep approach to learning examine

new facts and ideas critically and try to integrate them into existing cognitive structures by making numerous links (Biggs, 1999). In this study, students' internal learning outcomes, based on their attempts to form an internally consistent value system on entrepreneurship and CE as well as to consider and test CE from their personal perspective, resonate with the deep approach to learning. Although the divide between external and internal learning outcomes or between surface and deep learning approaches is not clearly defined, they suggest that learning, and particularly affective learning, is not only about the content of learning but also about its nature—how deeply it manages to touch upon students' thinking and behaviour.

This study demonstrates that understanding affective learning outcomes in the framework of the taxonomy of affective outcomes is ambiguous. As suggested above, it seems that affective learning outcomes cannot be considered solely based on their content, such as self-confidence or entrepreneurial spirit, but rather on the nature of those outcomes, which determine the level of expertise in the taxonomy. Let us take entrepreneurial spirit as an example. A student understanding the importance of entrepreneurial spirit in making things happen has reached the level of *problematizing*, as he or she has internalised the related values to his or her thinking. By pondering various ways in which he or she could create and exploit entrepreneurial spirit in his or her work and the related implications demonstrates his or her own positioning towards entrepreneurship and the achievement of the level of *own relationship* to CE. Furthermore, by being able and willing to behave differently and adopt an entrepreneurial spirit in his or her everyday actions in the long term demonstrates the incorporation of the entrepreneurial spirit into his or her own behaviour and achievement of the highest level of affecting learning outcomes, *internalising CE as one's own mode of work*. All of these are illustrations of entrepreneurial spirit, but they characterise different levels of expertise in the taxonomy.

Furthermore, our findings suggest that only internal affective outcomes are truly meaningful in EE. For instance, high levels of a need for achievement require throwing oneself into energetic and innovative activities that require planning for the future and entail individual responsibility for the outcomes (McClelland, 1961). In order to do so, an individual must understand the rationale behind energetic and innovative activities and be willing to engage in them. In the taxonomy, this requires more than valuing (i.e., either organisation or characterisation of expertise, which respectively denote internal affective learning in this study).

Conclusion, limitations and implications

A starting point of this study was a clear need for research on the affective domain of entrepreneurship and the related affective learning outcomes. Based on our findings, we argue that EE can generate various affective learning outcomes, which not only refer to the content of learning but also to its nature. Building on the taxonomy of affective learning outcomes, it was possible to identify external and internal affective learning outcomes based on the levels of expertise. Based on our findings, we question whether only the internal affective learning outcomes can be considered affective learning outcomes in EE, as they require references to one's own beliefs, attitudes and emotions. Finally, our findings enlighten the development of affective learning outcomes in the studied personal contexts and thus highlight the subjective and personal nature of affective learning outcomes in EE, as suggested previously (see Shephard, 2008). We conclude that a course organised in a classroom setting may not be sufficient for achieving the highest level of affective learning outcomes (internalising CE as one's own mode of action), which requires the potential for reflection in a real-world setting (i.e. working life). However, our findings suggest that a course may still enhance and trigger the achievement of such higher-level affective learning outcomes. By applying the taxonomy of affective learning outcomes, the study contributes by providing a more fine-grained understanding of the complex affective learning outcomes in EE.

Our study also has limitations. First, the findings are derived from a course on CE. This is justified given the similarities in the entrepreneurial process and behaviour found in new business creation and existing organisations. Still, we acknowledge that it would be interesting to study affecting learning outcomes in a start-up setting. Second, the students were not instructed or guided in how to report their affective learning outcomes *per se*, but they were encouraged to share any learning experiences indicative of their learning with regard to CE. We acknowledge that students have their personal writing styles, and some are more willing than others to share their personal experiences. It would be interesting to examine whether more explicit instructions in describing affective learning outcomes would produce a more nuanced understanding of the affective domain and the related outcomes. Finally, the development of affective learning outcomes requires a longer period of time than the duration of one course. Therefore, it is important to conduct longitudinal analyses of the affective learning outcomes.

Our study has clear implications for educators, as it is important for them to understand the complexity of the affective domain and the related learning outcomes of EE, particularly in the university setting, where the most desirable outcomes are complex and relatively difficult to

achieve. Educators should be aware of the challenges related to achieving internal affective learning outcomes in the classroom setting without any concrete ability to test and reflect on one's learning in real work (see also e.g. Buissink-Smith et al., 2011). Our study supports the previous suggestion (see e.g. Shephard, 2008) that providing role models and interactive learning methods, such as role playing, discussions and debate, may support students to achieve affective learning outcomes in EE. Furthermore, it is noteworthy to understand that cognitive learning outcomes likely support students to reach affective learning outcomes in EE. We hope that this study encourages educators and researchers to further test and investigate various EE endeavours.

Notes

ⁱ Another well-known framework of learning is the framework of cognition, affect and conation (Kyrö et al., 2011; Snow et al., 1996), which differs from the cognitive, psychomotor and affective in the sense that in the former, the affective domain encompasses both the affective and conative domains in the latter. Furthermore, the latter does not highlight the role of skills as the previous framework does (Bloom et al., 1956; Kraiger et al., 1993; Kyrö et al., 2011; Snow et al., 1996).

References

- Addison N (2014) Doubting learning outcomes in higher education contexts: From performativity towards emergence and negotiation. *International Journal of Art & Design Education* 33(3): 313–325.
- Ajzen I (1991) The theory of planned behavior. *Organizational Behavior and Human Development Processes* 50: 179–211.
- Allen NK and Friedman BD (2010) Affective learning: A taxonomy for teaching social work values. *Journal of Social Work Values and Ethics* 7(2): 1–12.
- Åmo BW and Kolvereid L (2018) Corporate entrepreneurship. In: Blackburn R, De Clercq D and Heinonen J (eds) *The SAGE Handbook of Small Business and Entrepreneurship*. New York: Routledge, pp. 289–278.
- Antoncic B and Hisrich R (2003) Clarifying the entrepreneurship concept. *Journal of Small Business and Enterprise Development* 10(1): 7–24.
- Bakotic D and Kruzic D (2010) Students' perceptions and intentions towards entrepreneurship: The empirical findings from Croatia. *The Business Review, Cambridge* 14(2): 209–215.
- Bergmann J and Sams A (2014) *Flipped Learning: Gateway to Student Engagement*. Eugene, Washington DC: International Society for Technology in Education.
- Biggs J (1999) *Teaching for Quality Learning at University*. SHRE and Open University Press.
- Blenker P, Trolle S, Signe E, Fredriksen H, Korsgaard S and Wagner K (2014) Methods in entrepreneurship education research: A review and integrative framework. *Education + Training* 56(8/9): 697–715.
- Bloom BS, Engelhart MD, Furst EJ, Hill WH and Krathwohl DR (1956) *Taxonomy of Educational Objectives. Handbook I: Cognitive Domain*. New York: McKay.
- Bloom BS, Hastings JT and Madaus GF (1971) *Handbook on Formative and Summative Evaluation of Student Learning*. New York: McGraw-Hill.
- Braun V and Clarke V (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology* 3(2): 77–101.
- Brown DL, Ferrill MJ, Hinton AB and Shek A (2001) Self-directed professional development: The pursuit of affective learning. *American Journal of Pharmaceutical Education* 65: 240–246.
- Crane FG (2014) Measuring and enhancing dispositional optimism and entrepreneurial intent in the entrepreneurial classroom: An Bahamian study. *Journal of the Academy of Business Education* 15: 94–104.
- Buissink-Smith N, Mann S and Shephard K (2011) How do we measure affective learning in higher education? *Journal of Education for Sustainable Development* 5(1): 101–114.

- Fayolle A and Gailly B (2008) From craft to science: Teaching models and learning processes in entrepreneurship education. *Journal of European Industrial Training* 32(7): 569–593.
- Fisher S, Graham M and Compeau M (2008) Starting from scratch: Understanding the learning outcomes of undergraduate entrepreneurship education. In: Harrison RT and Leitch C (eds) *Entrepreneurial Learning: Conceptual Frameworks and Applications*. New York: Routledge, pp. 313–340.
- Fretschner M and Weber S (2013) Measuring and understanding the effects of entrepreneurial awareness education. *Journal of Small Business Management* 51(3): 410–428.
- Friedman, BD (2008) *How to Teach Effectively*. Chicago: Lyceum Books.
- Friedrich C and Visser K (2006) Building human capital in difficult environments: An empirical study of entrepreneurship education, self-esteem, and achievement in South Africa. *Developmental Entrepreneurship: Adversity, Risk, and Isolation* 5: 355–378.
- Furst E (1994) Bloom’s taxonomy: Philosophical and educational issues. In LW Anderson and LA Sosniak (eds) *Bloom’s Taxonomy: A Forty-Year Retrospective*. Chicago: University of Chicago Press, 28–40.
- Galloway L, Anderson M, Brown W and Wilson L (2005) Enterprise skills for the economy. *Education + Training* 47(1) 7–17.
- Galloway L, Kapasi I and Whittam G (2015) Exploring ‘successful’ outcomes of entrepreneurship education: A follow-up study. *Industry and Higher Education* 29(6): 505–515.
- Gartner WB (1988) “Who is an entrepreneur” is the wrong question. *American Small Business Journal* 12(4): 11–32.
- Gielnik MM, Frese M, Kahara-Kawuki A, Wasswa Katono I, Kyejjusa S, Ngoma M, Munene J, Namatovu-Dawam R, Nansubuga F, Orobia L, Oyugi J, Sejjaaka S, Sserwanga A, Walter T, Bischoff KM and Dlugosh TJ (2015) Action and action-regulation in entrepreneurship: Evaluating a student training for promoting entrepreneurship. *Academy of Management Learning & Education* 14(1): 69–94.
- Gordon I, Hamilton E and Jack, S (2012) A study of a university-led entrepreneurship education programme for small business owners/managers. *Entrepreneurship and Regional Development* 24(9-10): 767–805.
- Henry C, Hill FM and Leitch CM (2004) The effectiveness of training for new business creation. A longitudinal study. *International Small Business Journal* 22(3): 249–271.
- Honig B (2004) Entrepreneurship education: Toward a model of contingency-based business planning. *Academy of Management Learning & Education* 3(3): 258–273.
- Hussey T and Smith P (2008) Learning outcomes: A conceptual analysis. *Teaching in Higher Education* 13(1): 107–115.
- Hytti U and O’Gorman C (2004) What is “enterprise education?” An analysis of the objectives and methods of enterprise education programmes in four European countries. *Education + Training* 46(1): 11–23.

- Hytti U, Stenholm P, Heinonen J and Seikkula-Leino J (2010) Perceived learning outcomes in entrepreneurship education – The impact of student motivation and team behaviour. *Education + Training* 52(8/9): 587–606.
- Iakovleva T, Kolvereid L and Stephan U (2011) Entrepreneurial intentions in developing and developed countries. *Education + Training* 53(5): 353–370.
- Jaén I and Liñán F (2013) Work values in a changing economic environment: The role of entrepreneurial capital. *International Journal of Manpower* 34(8): 939–960.
- Kennedy D (2006) *Writing and Using Learning Outcomes: A Practical Guide*. Cork: University College Cork.
- Kozlinska I (2016) *Evaluation of the Outcomes of Entrepreneurship Education Revisited Evidence from Estonia and Latvia*. Publications of the University of Turku, sub-series E Oeconomica, Juvenes Print, Turku, Finland.
- Kraiger K, Ford J and Salas E (1993) Application of cognitive, skill-based and affective theories of learning outcomes to new methods of training evaluation. *Journal of Applied Psychology* 78: 311–328.
- Krathwohl DR, Bloom BS and Masia BB (1964) *Taxonomy of Educational Objectives. Handbook II: Affective Domain*. New York: McKay.
- Krathwohl, DR (2002) A revision of Bloom’s taxonomy: An overview. *Theory into Practice* 41(4): 212–218.
- Krueger NF (2005) The cognitive psychology of entrepreneurship. In: Acs ZJ and Audretsch DB (eds) *Handbook of Entrepreneurship Research: An Interdisciplinary Survey and Introduction*. New York: Springer.
- Krueger NF and Carsrud A (1993) Entrepreneurial intentions: Applying the theory of planned behavior. *Entrepreneurship and Regional Development* 5: 315–330.
- Krueger NF, Reilly MD and Carsrud AL (2000) Competing models of entrepreneurial intentions. *Journal of Business Venturing* 15(5–6): 411–32.
- Kuratko, DF (2005) The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship Theory and Practice* 29(5), 577-598.
- Kuratko DF, Covin JG and Hornsby JS (2014) Why implementing corporate innovation is so difficult. *Business Horizons* 57(5): 647–655.
- Kuratko DF and Morris MH (2018) Corporate entrepreneurship: A critical challenge for educators and researchers. *Entrepreneurship Education and Pedagogy* 1(1): 42–60.
- Kyrö P, Mylläri J and Seikkula-Leino J (2011) *Meta Processes of Entrepreneurial and Enterprising Learning: The Dialogue Between cognitive, Conative and Affective Constructs*. Entrepreneurship Research in Europe: Evolving Concepts and Processes. Cheltenham: Edward Elgar Publishing.
- Lackéus M (2014) An emotion-based approach to assessing entrepreneurial education. *International Journal of Management Education* 12(3): 374–396.

- Lange J, Marram E, Jawahar AS, Yong W and Bygrave W (2011) Does an entrepreneurship education have lasting value? A study of careers of 3,775 alumni. *Journal of Business and Entrepreneurship* 25(2): 1–31.
- McClelland D (1961) *The Achieving Society*. Princeton.
- Markman GD, Baron RA and Balkin DB (2005) Are perseverance and self-efficacy costless? Assessing entrepreneurs' regretful thinking. *Journal of Organizational Behavior* 26(1): 1–19.
- Mets T, Kozlinska I and Raudsaar, M (2017) Patterns in entrepreneurial competences as the perceived learning outcomes of entrepreneurship education: The case of Estonian HEIs. *Industry and Higher Education* 31(1): 23–33.
- Moriano JA, Palací FJ and Morales JF (2007) The psychosocial profile of the university. *Psychology in Spain* 11: 72–84.
- Munoz CA, Mosey S and Binks M (2011) Developing opportunity identification capabilities in the classroom: Visual evidence for changing mental frames. *Academy of Management Learning & Education* 10(2): 277–295.
- Murtonen M, Gruber H and Lehtinen E (2017) The return of behaviourist epistemology: A review of learning outcomes studies. *Educational Research Review*. DOI:10.1016/j.edurev.2017.08.001
- Nabi G, Liñán F, Fayolle A, Krueger, N and Walmsley A (2017) The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education* 16(2): 277–299.
- Nabi G, Walmsley A, Liñán F, Akhtar I and Neame C (2016) Does entrepreneurship education in the first year of higher education develop entrepreneurial intentions? The role of learning and inspiration. *Studies in Higher Education*. Available at: <http://dx.doi.org/10.1080/03075079.2016.1177716>
- Ormeil CP (1974) Bloom's taxonomy and the objectives of education. *Educational Research* 17(1): 3–18.
- Piaget J (1952) *The Origins of Intelligence of Children*. New York: WW Norton & Co.
- Pierre E and Oughton J (2007) The affective domain: Undiscovered country. *College Quarterly*, 10(4). Available at: <http://www.collegequarterly.ca/2007-vol10-num04-fall/pierre-oughton.html>
- Piperopoulos P and Dimov D (2015) Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions. *Journal of Small Business Management* 53(4): 970–985.
- Pittaway L and Cope J (2007) Entrepreneurship Education A systematic review of the evidence. *International Small Business Journal* 25(5): 479–510.
- Postlethwaite N (1994) Validity vs. utility: Personal experiences with the taxonomy. In: LW Anderson and LA Sosniak (eds) *Bloom's Taxonomy: A Forty-Year Retrospective*. Chicago: University of Chicago Press, 174-195.

- Pring R (1971) Bloom's taxonomy: A philosophical critique (2). *Cambridge Journal of Education* 1(2): 83–91.
- Rae D, Martin L, Antcliff V and Hannon P (2012) Enterprise and entrepreneurship in English higher education: 2010 and beyond. *Journal of Small Business and Enterprise Development* 19(3): 380–401.
- Rae D and Woodier-Harris N (2012) International entrepreneurship education: Postgraduate business student experiences of entrepreneurship education. *Education + Training* 54(8/9): 639–656.
- Rubin R and Martell K (2009) Assessment and accreditation in business schools. In Armstrong S and Fukami C (eds) *The SAGE Handbook of Management Learning, Education and Development*. Los Angeles: Sage, pp. 364–384.
- Sánchez JC (2011) University training for entrepreneurial competencies: Its impact on intention of venture creation. *International Entrepreneurship and Management Journal* 7(2): 239–254.
- Shephard K (2008) Higher education for sustainability: Seeking affective learning outcomes. *International Journal of Sustainability in Higher Education* 9(1): 87–98.
- Snow R, Corno L and Jackson D (1996) Individual differences in affective and conative functions. In Berliner DC and Calfee RC (eds) *Handbook of Educational Psychology*. New York: Simon and Schuster Macmillan, pp. 243–310.
- Souitaris V, Zerbinati S and Al-Laham A (2007) Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing* 22(4): 566–591.
- Vesper KH and Gartner WB (1997) Measuring progress in entrepreneurship education. *Journal of Business Venturing* 12(5): 403–421.
- Wight A (1971) *Affective Goals in Education*. Interstate Education Resource Service Center. Available at: <http://www.eric.ed.gov/PDFS/ED069733.pdf> (accessed 6 December 2017)

Appendix 1. Analysis of the research material

Level in the Affective Domain	Application of the level in the study context	Quote examples from the research material	Indicators of affective learning outcomes in EE literature	Affective learning outcomes in CE
Level 5: Characterisation adopts a long-lasting value system that can be seen as pervasive, consistent and predictable	Incorporates CE and entrepreneurial behaviour into one's own behaviour	<i>'I would like to be an entrepreneur, and those three characteristics, as far as I'm concerned I don't have them yet. Therefore, I will now be able to try to develop them in order to fulfil as much characteristics as possible in order to be a good entrepreneur.'</i> <i>'The interesting guest lecturers [name1] and [name2] inspired me to take more bold actions inside the organisation I am working in and also to examine my own choices.'</i> <i>'During the course, I understood that my nature is definitely not an entrepreneurial one since I do not have such qualities as being self-appointed to the tasks. Also intrapreneurs are people who are self-determined goal setters who often take the initiative to do things no one has asked them to do. Intrapreneurs also tend to be confident with their skills and to be action oriented. And, that definitely does not apply to me.'</i>	need for achievement self-efficacy, entrepreneurial spirit self-efficacy	Internalising CE as one's own mode of work
Level 4: Organisation starts to compare diverse values and resolves possible conflicts between the values to form an internally consistent value system	Organises values into priorities by contrasting and relating the role of CE and entrepreneurial behaviour into other activities and concepts	<i>'I have learnt about how to act as an entrepreneurial person and what one with such a mind-set should actually do.'</i> <i>'My thoughts were a bit against this concept (CE) in the beginning but now afterwards I am thinking this is the only way to go.'</i> <i>'She [peer student] also saw in me some entrepreneurial actions, which gave me more confidence in my entrepreneurial potential.'</i> <i>'The most important thing I will be taking with me from the course is a whole lot of confidence and courage to pursue my dreams.'</i>	self-efficacy, entrepreneurial spirit need for achievement self-efficacy self-confidence	Own relationship to CE
Level 3: Valuing internalises an appreciation for values	Shows understanding of the worth/value of CE and entrepreneurial behaviour at a general level	<i>'The guest speaker also inspired me because he showed that you don't have to be an A student or go to university to succeed in working life. If you have passion to do something, you will succeed even though it means making mistakes.'</i> <i>'You can be entrepreneurial with almost everything.'</i>	self-confidence entrepreneurial spirit	Problematising CE
Level 2: Responding shows interest towards the topic	participates actively to the CE course, writes and submits the learning diary	<i>'I believe being entrepreneurial is not something you just learn at once, but it is a lifelong process of learning from mistakes and experiences.'</i> <i>'We had to complete a task in which we had to draw an entrepreneurial person, showing his characteristics, skills, social and economic status, education, industry, sex, nationality, skills, hobbies, interest, style and values with his interests and characteristics. We were divided into groups in a random order, and it was a sort of opportunity for us to share our ideas and discuss how we feel differently about an entrepreneurial person, their characteristics and lifestyle. It was quite an interesting task.'</i>	nature of CE interest towards course content and activities	CE as a topic
Level 1: Receiving participates in the educational activity and learns about the topic	participates in the course, is aware and is willing to learn about CE and entrepreneurial behaviour	NA	NA	NA